

not sufficiently extended —

Inaugural Dissertation

on the

Paper March 1828

Medical Properties

of the

Euphorbia Squamaria

by

Maurice Barclay

"Every enlightened citizen should be interested in the examination of the
natural productions of his country."

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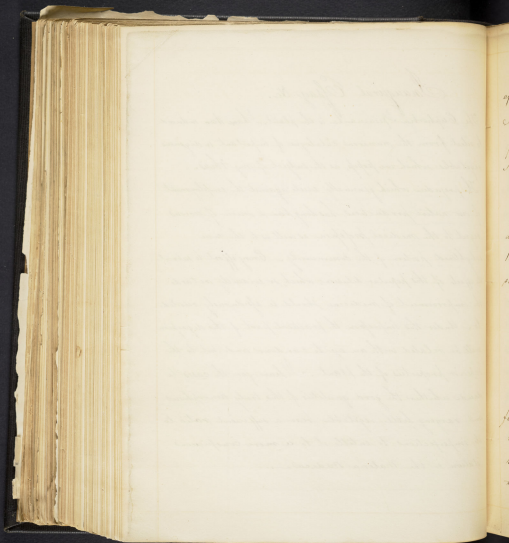
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Inaugural Essay &c.

The *Euphorbia Ipecacuanha* is the plant, I have been induced to select from the numerous catalogue of important indigenous vegetables which we possess, as the subject of my thesis.

The prejudice which generally exists against the employment of our native productions, has long been a source of serious regret to the medical profession, as well as to the more enlightened portion of the community. Every effort to subvert the effects of this popular delusion, which so evidently retards the improvement of medicine, should be vigorously resorted to. Under this impression the practical part of this dissertation will be related with an eye to candour and not to the superior properties of the plant. I leave for the cases to decide whether the good qualities of this truly amorphous and varying little vegetable, bear a sufficient ratio to its imperfections, to entitle it to a more conspicuous station in the *Materia Medica*—...



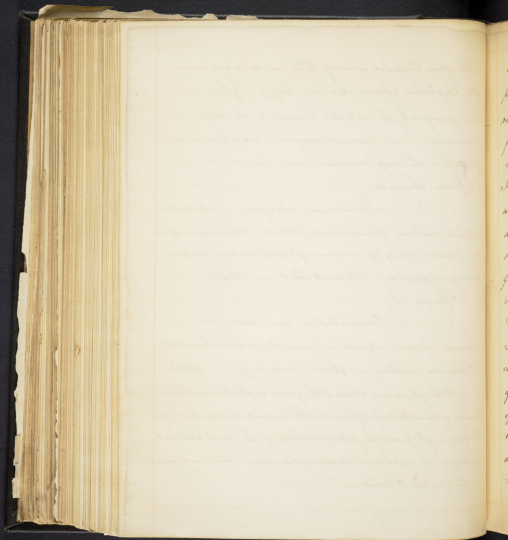
The genus *Euphorbia*, according to Dioscorides, it is so named
after Euphorbus, physician to Mithra, King of Lycia.
It is arranged by the celebrated Linnaeus in the class
polyandria — and order Monogynia; and by Barton and
Nuttall in the class monoeica — order mono delphia.
Generic character

Involucrum caliciform 8 to 10 toothed
alternate dentures, glanduloid or petaloid; *Stamens* indefinite
12 or more, rarely less, feminine flowers, central, naked
solitary, stipitated. *Stylus* 3-lobed — Nutt.

Specific ch.

Proem bush or semi-erect, glabrous;
Leaves, opposite, ovate or lanceolate, or linear lanceolate;
Peduncles, axillary or flowered, very long; — Bart.

Although many species of the genus *euphorbia* are to be
found in the desert of Africa, in China and many parts of
Europe, yet from the representations of the most celebrated
botanists, the *euphorbia* *peruviana* is exclusively indigenous
to the United States.



The only situation in which I have found the euphorbia
plentifully, is in an old field at Basco's Point, my native
residence, near the Atlantic Ocean and Great Cyprestone river;
from which place I obtained a sufficient quantity of the root,
to prosecute my inquiries relative to its medicinal qualities.
I again saw it in an excursion near Salem N.H. Here it
was not in the same profusion as at Cape May. There is no
doubt however but it exists along the sea coast in quantities
sufficient to satisfy every demand that might be made
for it as a medicine. According to Michx. and Buxton
it is to be found in the Atlantic states from New-Hampshire to
Georgia, and in some of the Western states.

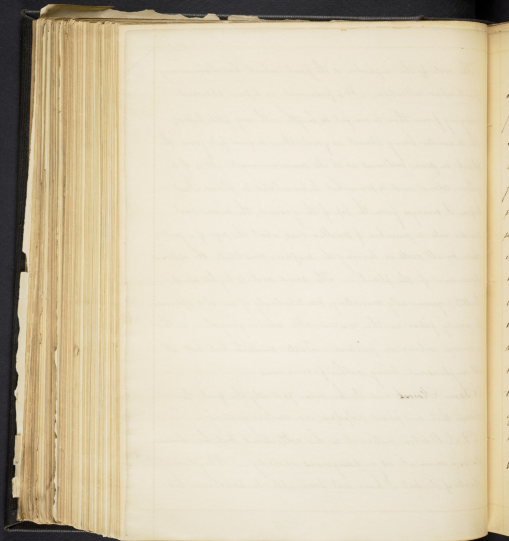
It is singularly amorphous, varying much in the shape and
colour of its leaves, and might easily be mistaken by persons
of limited botanical knowledge, for a different species
of the same genus. It is perennial flowering from April
to July. It delights in a sandy loose soil, and grows
almost spontaneously where the ground is so poor as scarcely
to produce any other species of vegetation.

The root of the euphorbia is the part which has claimed my particular attention. It is perennial as before observed varying from three to six feet in length with very little taper; the diameter being almost as great three or four feet from the plant as in some instances at its commencement. It is of a yellow colour, and is somewhat tuberculated in places. Just before it emerges from the top of the ground, the main root divides into a number of smaller ones, about the size of a quill; these small roots on leaving the surface, constitute the external appearance of the plant. The dried root is light and brittle, generally consisting, particularly if an old specimen of woody fibres in the centre. Its colour greyish - rather a cream colour on fracture. Taste, sweetish but not at all unpleasant, being rather farinaceous.

Deacon Storck and Richer were probably the first to observe that our plant possesses an emetic quality.

P. L. Barton notices it in his collections, but he chooses to condemn it as a dangerous remedy. Bigelow speaks of it, but I have not been able to ascertain his

why



conception of it as a medicine, ~~and~~ ^{the} supports its chemical composition to be "a substance of the nature of caoutchouc; / soluble in ether but not in alcohol/, resin, mucous, and fecula." The existence of caoutchouc or something similar to it, cannot be doubted; for by exsiccation between the fingers of the milky juice, which exudes from the plant upon fracture in the green state, it is converted into a substance much allied in its possible properties to caoutchouc.

A circumstance worthy of remark transpired whilst engaged in my experiments, which goes in a measure to prove that the same principle exists to a considerable degree in the milky exudation as well as in the substance of this amorphous vegetable production. only
T Having collected a quantity of the root for the purpose of accomplishing the object of my thesis, previously to drying it, it was washed in water, that it might be cleansed of the dirt which adhered to it. The water rendered milky by this process was poured off and eagerly quaffed up by a flock of babbling geese that were stationed along the gutter. The consequence was in a few minutes afterwards, a perfect

ception of their noise, violent pickup and vomiting so much
so they were not enabled by their own efforts to regain the
field. However in a few hours they recovered from their
violent prostration, but took due care to thim the spot,
which had been the cause of so much solicitude on the
part of their stomachs -

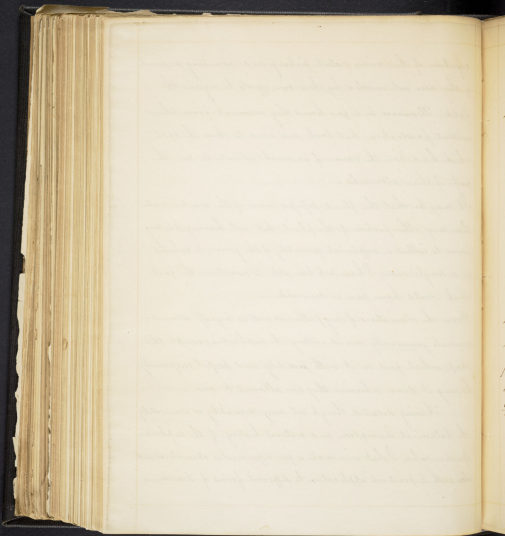
It may be that this fluid possesses more of the emetic virtue
than any other portion of the plant; but not having it in my
power to collect a sufficient quantity of the juice, to exhibit
in a single case, I have not been able to ascertain the fact
which would have been so desirable -

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From the observations of my father as well as myself domestic
animals generally avoid eating the euphorbia; except the
sheep, which feed on it with avidity and perfect impunity,
keeping it down wherever they are allowed to run -

+

Having detailed though not very minutely or accurately
the botanical description and natural history of the euphorbia
peruviana, I shall now make a few experimental observations and
close with its practical application to different forms of disease.



Experiment 1st, The first preparation that I made of the sulphurea, was a powder of the dried root, which I effected by passing the previously pulverized root, through a powder sieve constructed for the purpose.

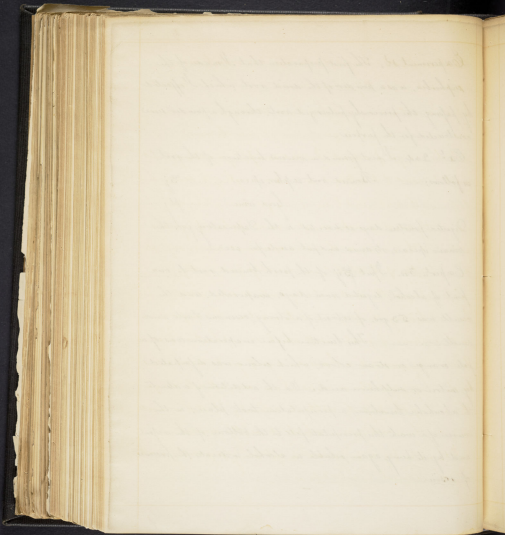
Ex^t 2nd, I next formed a vinous tincture of the root, as follows: — Dried root sulph. specu. 3j

Good wine. ptj

Digested fourteen days as directed in the Dispensatory for the Vinum specu., strained and put aside for use.

Ex^per^t 3rd, I put 3ij of the fresh bruised root to our pint of alcohol, digested seven days, evaporated, and the result was 53 grs. of extract, of a strong resinous taste and smell. — This tincture before evaporation was of a

pale orange or straw colour, which colour was dissipated by nitric or sulphuric acid. On the addition of water to the alcoholic tincture, a precipitation took place; in the course of a week this precipitate fell to the bottom of the vessel and by its being again soluble in alcohol indicates the presence of resin.

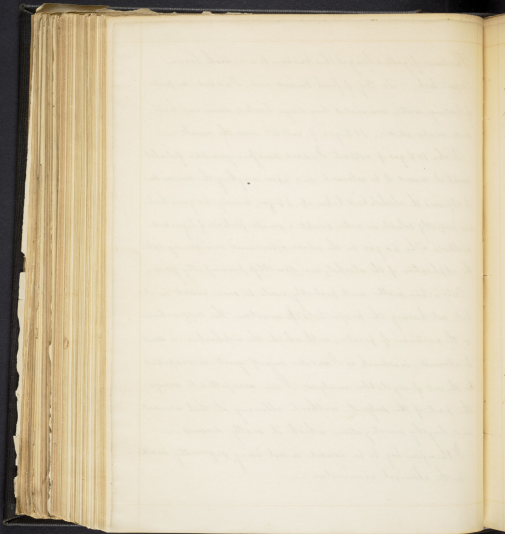


Produce of galls changed the tincture to a reddish brown
Expt. 2^d To 5ij of fresh bruised root, I added one pint
of boiling water, macerated two days, boiled down one half,
and evaporated; 105 grs of extract was the result.

To this 105 grs of extract I added successive quantities of alcohol
until it ceased to be coloured, and upon weighing the remainder
it appeared the alcohol had taken up 45 grs, leaving 60 grs which
was perfectly soluble in water except a small portion of ligneous
matter. The 60 grs in the above experiment remaining after
the application of the alcohol, are doubtless principally gum.

Extractive matter most probably exists to some extent in it;
but not having the proper tests, to ascertain this supposition
or the existence of pectin, with which the euphorbia is said
to abound, inasmuch as I consider myself quite incompetent
for the art of vegetable analysis, I am compelled to resign
this part of the subject, without allowing it that accurate
and lengthy investigation which it really deserves.

I therefore beg to be excused in not being sufficiently busy
in the chemical examination.



The little opportunity of applying a new medicine to practice by the student must be known to every one, who has acquainted himself with the sciences of medicine. However through the kindness of my preceptor, Dr. Humphreys E. Basley of Salem N. H., to whose friendship and attention I am greatly indebted, I am enabled to relate the result of several experiments with the euphorbia species, most of which were under the

Doctors immediate direction. It will appear we have exhibited it in several forms, such as the powder, (obtained by Dr. 1st) the visuous tincture (Dr. 2nd) and the rectified extract, (Dr. 3rd) as likewise in combination with calomel in order to test its cathartic effect.

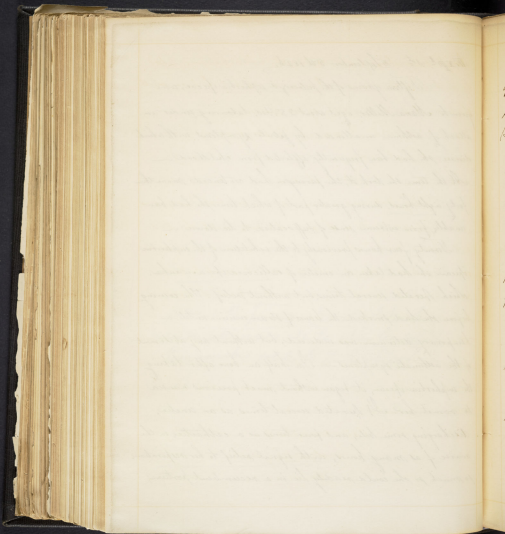
The following experiments were instituted expressly for the purpose to which they are devoted, and hence I can vouch for the correctness of their history as they were put to paper as they respectively transpired.

Did not the previous Senator & his
condemnation to want all the other benefits
thus ascribed solely to the Euphorbia

Expt. 1st September 5th 1826.

Fifteen grains of the pulverized euphorbia speciosa, were given to Maria Miller, aged about 25 Yrs, labouring under an attack of asthma, unattended by febrile symptoms, with which disease she had been frequently afflicted from childhood. At the time she took it, the paroxysm had continued more than forty eight hours, during greater part of which time she had been unable from extreme sense of suffocation to lie down.

Twenty four hours previously to the exhibition of the euphorbia speciosa she had taken an emetic of callicocca speciosa, which operated several times, but without relief. The evening before she had picked the leaves of Stramonium until a temporary delirium was induced, but without any abatement of the asthmatic symptoms. In half an hour after taking the euphorbia speciosa, it began without much previous nausea to vomit her. It operated several times as an emetic, discharging some bile, and four times as a cathartic, in the course of 20 many hours, with signal relief to her respiration, so much so, she could readily lie in a recumbent posture,



though some wheezing still continued, which however passed off in three or four hours. Now on the 26th of the same month she has not had a return of the disease.

(Jan'y. 24th 1828. She was perfectly free from asthma during the last season.)

Ex. ^{II}. Sept. 5th 1826.

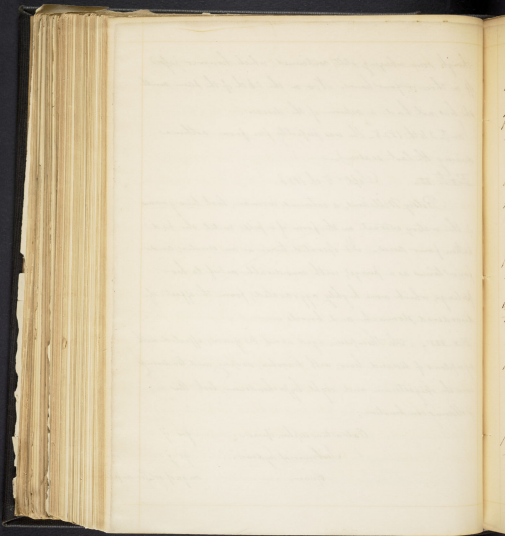
Betsy Williams, a coloured woman, took two grains of the watery extract in the form of a pill until she had taken four doses. It operated twice as an emetic, and four times as a purge, with considerable relief to her feelings, which were highly aggravated, from the effect of disordered stomach and bowels.

Ex. 183, H. Hampton, aged about 85 years, affected with symptoms of diseased liver, with diarrhoea, dyspepsia, and tenderness over the epigastrium and right hypochondrium, took the following combination;

Extractum asph. sfras. gr. ij.

Subminis. hydras. gr. j.

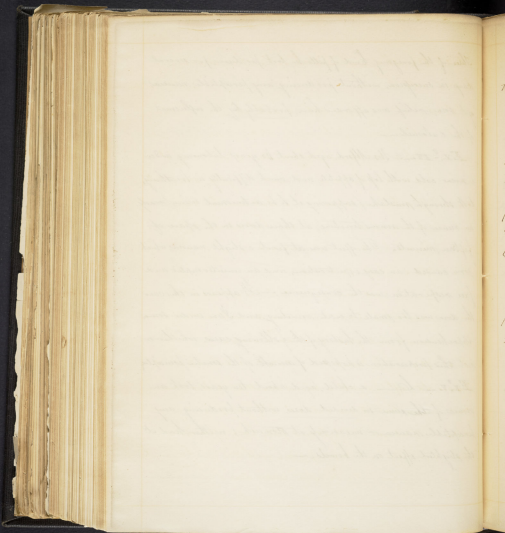
Opium m. gr. of gr. for on pills



Three of the foregoing kind of pills he took per diem, for several days in succession, without producing any perceptible nausea; yet some relief was afforded him, probably by the influence of the calomel.

Ex. II. — Mrs. Afford, aged about 60 years, labouring under a severe cold with loss of appetite, and much difficulty in breathing, took through mistake (supposing it to be antiscorbutic wine) nearly an ounce of the venous tincture, at three doses in the space of fifteen minutes. The effect was, at first a slight nausea, which soon caused an easy expectoration, and an uninterrupted and free respiration was the consequence. — It appears in this case the dose was too small to excite vomiting, and I am under some apprehension from the history of the following cases, whether or not this preparation is possessed of much of the emetic principle.

Ex. v. — L. — a child, aged about ten years, took an ounce of the wine in divided doses, without producing any perceptible nausea or uneasiness at stomach; neither had it the slightest effect on the bowels.



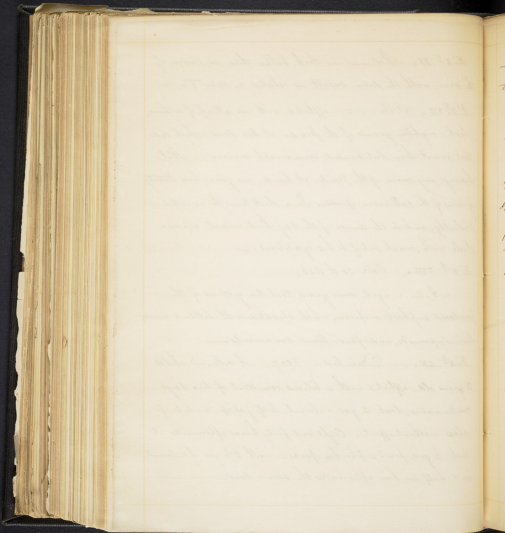
Ex^t. II, M^d. — took better than in course of
the wine, with the same result as related in case V. —

Ex^t. III, M^d. — afflicted with an attack of asthma;
took eighteen grains of the powder at two doses, which did
not vomit him, but caused considerable nausea. Not
having any more of the powder at hand, we gave him twenty
grains of the *callicocca* species. In a short time he vomited
violently, and in the course of the day had several copious
stools, with much relief to his symptoms. —

Ex^t. IV. Oct. 25th 1826,

A — aged nine years, took ten grains of the
powdered *safforbia* species, which operated with little nausea,
twice upwards, and four times downwards. —

Ex^t. V. — December — 1827. A coloured child
3 years old, afflicted with a bilious remittent of two days
continuance, took 2 grs. calomel, 4 of jalap, and 4 of
aloë without effect. Eight and forty hours afterwards, it
took 4 grs. pow^d. *safforbia* species. — with 2½ grs. of calomel;
and half an hour afterwards the same dose. —



—two hours after this, it had one large evacuation from the bowels, attended but not preceded by nausea.

Ex^o I. Dec. 1827. J. Home aged 35 years, affected with an intermittent which had continued about five days. He complained of pain over our eye, and a lead at the pit of the stomach. He took xxx grains of the powd. euphorbiae spicac., it produced very little nausea, and in the course of four hours afterwards, it operated three or four times on his bowels. This patient had taken 30 drops of laudanum about an hour before the euphorbia.

Ex^o II. B. Jackson a black boy aged 9 years, laboured under remittent fever with occasional chills. He complained of distress at the stomach, bowels bound, when we directed him 10 grs of Calomel, with 10 grains of powd. euphorbiae early in the evening. It caused some nausea through the night, and in the morning operated with considerable energy four or five times.

If any inference can be drawn from a perusal of the foregoing cases, it might appear;

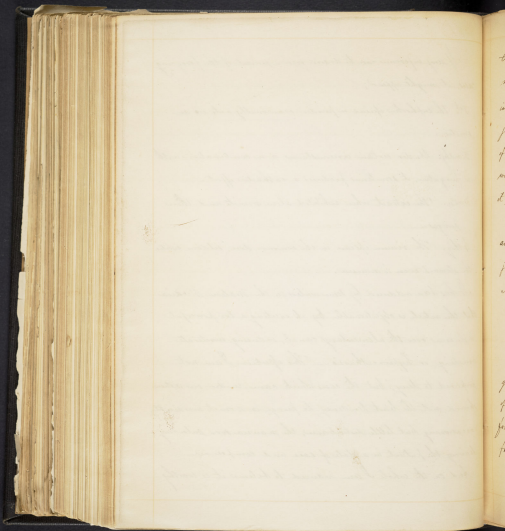
1st The euphorbia officinalis in powder occasionally acts as an emetic.

2^{ndly}. Under certain circumstances, or in combination with a purgative, it sometimes produces a cathartic effect.

3^{rdly}. The extract when exhibited alone vomits and then purges.

4^{thly}. The vinum officinale in the common dose, seldom excites the stomach even to nausea.

It has been objected by some writers on the Materia Medica that this article is objectionable, by its exerting a too powerful influence over the alimentary canal, inducing inordinate vomiting or hyper-catharsis. This objection I am not prepared to deny, but the cases which came under our notice showed not the least tendency to purge or vomit inordinately, occasioning but little disturbance, the nausea soon subsiding leaving the patient in a state of ease and comfort. And on the whole I am induced to believe it is worthy



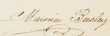
the attention of Medical men, whose location and acquirements
might enable them to set forth its peculiarities and place it
in its true light; the more so as it is particularly desirous at this
junction to find some medicine if possible, that will supply the place
of our *Calliorea Jacaranda*, which it is thought in a few years
will become extinct; its scarcity at the present period rendering
it particularly liable to adulteration.

Conscious of the imperfect manner in which I have treated this
article, from protracted ill health and consequent inability to do it
justice, or even to avail myself of the privilege of all the lectures,
I will conclude in the words of the Poet,

"if e'en our toil,

We ought to blame the culture, not the soil."

But before I dismiss the subject, allow me to return my
grateful acknowledgments to each and all of you, the Professors
of the medical department of the University of Pennsylvania, ✓
for the rich theoretical and practical information, I have received
from your lectures in the Chair of Medicine.

I am Yours Respectfully,
 Maria Barlow

the first of which was the London Convention
of 1840. It was the first of a series of
conventions which were held in London
and in other parts of Europe. The first
convention was held in London in 1840
and was attended by representatives of
the various nations of Europe. It was
the first of a series of conventions which
were held in London and in other parts
of Europe.

The second of the series was the
London Convention of 1844. It was
the first of a series of conventions which
were held in London and in other parts
of Europe. The third of the series was
the London Convention of 1848. It was
the first of a series of conventions which
were held in London and in other parts
of Europe.

The fourth of the series was the
London Convention of 1852. It was
the first of a series of conventions which
were held in London and in other parts
of Europe. The fifth of the series was
the London Convention of 1856. It was
the first of a series of conventions which
were held in London and in other parts
of Europe.



